

THE SPECIFIC STATUS OF *PHILIRIS SAPPHEIRA* SANDS  
(LEPIDOPTERA: LYCAENIDAE), WITH DESCRIPTION OF  
A NEW SUBSPECIES FROM AUSTRALIA

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**Abstract**

The identity of *Philiris sappheira* Sands, previously considered to be a subspecies of *P. nitens* (Grose-Smith), is defined and the species recognised from Australia for the first time. *Philiris sappheira manskiei* subsp. nov. is described from northern Queensland. The larval food plant is *Macaranga involuocrata* (Euphorbiaceae).

**Introduction**

Sands and Fenner (1978) examined four males and a female of an undescribed species of *Philiris* Röber, believed to be a subspecies of *P. nitens* (Grose-Smith), from Central Province, Papua New Guinea and found the male genitalia to be similar to those of *P. nitens lucina* Waterhouse & Lyell. The valvae were reported to be similar to those of *P. n. lucina* but shorter than typical *P. n. nitens*. The female, indistinguishable from that sex of typical *P. nitens* and captured 25 years earlier (Sands 1980), was placed in this taxon on the basis of proximity to place of capture of the males and the apparent relationship of the female to typical *P. nitens*, based on adult morphology. Sands (1980) later described these adults as *Philiris nitens sappheira* Sands. However, the identity of *P. n. sappheira* and its validity as a subspecies of *P. nitens* has been the subject of some doubt, following the location of an isolated colony of a distinctive blue *Philiris* (Figs 1-4) 40 km NW of Cooktown, northern Queensland, first discovered by Mr John Booy who collected a single male in January 1982.

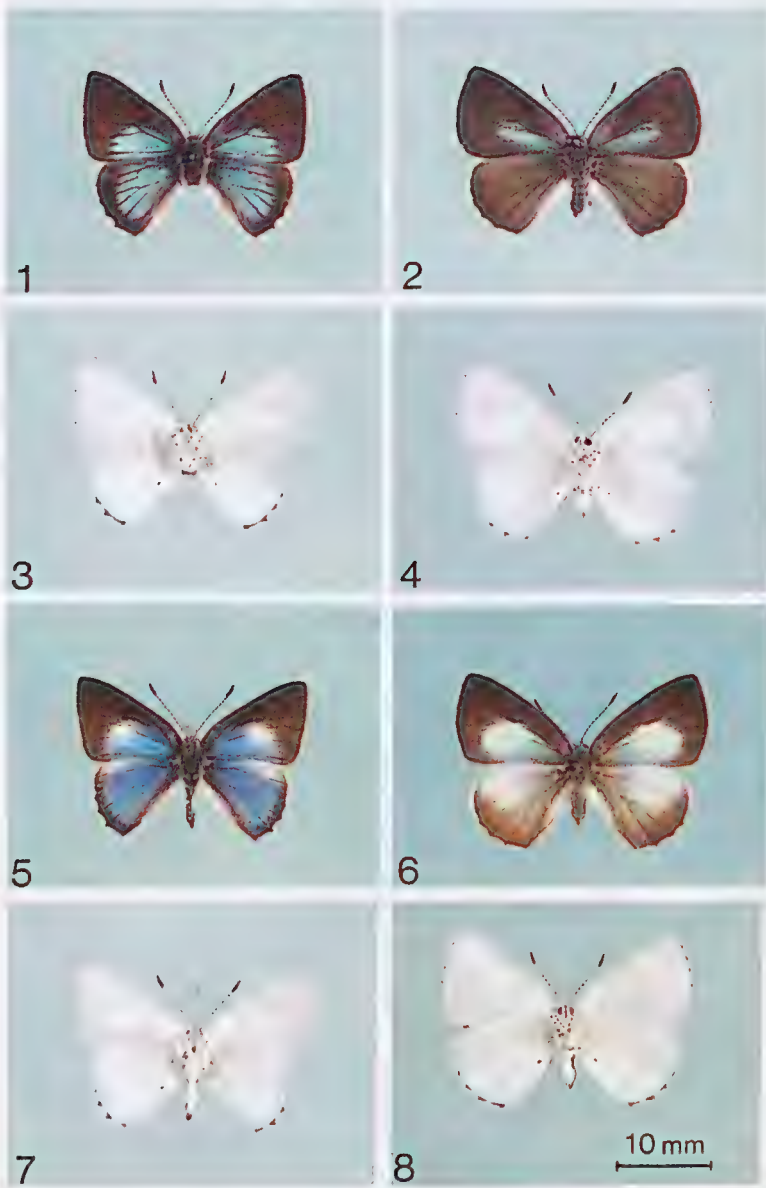
Whilst apparently a close relative of *P. nitens* (Figs 5-8), significant structural differences of the male genitalia (Figs 9-17), together with the distinctive wing pattern of the male upperside, suggest that the taxon *P. n. sappheira* deserves elevation to species level.

***Philiris sappheira sappheira* Sands, stat. rev.**

*Philiris nitens* ssp., Sands and Fenner, 1978: 107.

*Philiris nitens sappheira* Sands, 1980: 82, 83.

*Types.* PAPUA NEW GUINEA: *Holotype* ♂ (ANIC Type Reg. No. 3297, genitalia slide M511), Rouna Falls, Central Prov., 28.vi.1975, 550 m, D.P. Sands. *Paratypes*: 1 ♀, Subitana (Central District), 1800 ft. 15.ix.1949, collected by Wm. Brandt, E.J.L. Hallstrom; 1 ♂, Kokoda Trl, Cent. Prov., 10.i.1977, R. Straatman (all in Australian National Insect Collection, Canberra); 2 ♂♂, Central Dist., Rouna, 400 m., T. Fenner, 21.iv.1974 and 6.ii.1974 (in Central Reference Collection, Department of Primary Industry, Konedobu, Papua New Guinea).



**Figs 1-8.** *Philiris* spp.; males odd numbers, females even numbers; upperside and underside: (1-4) *Philiris sappheira manskiei* holotype male, paratype female; (5-8) *Philiris nitens nitens*.

*Philiris sappheira manskiei* subsp. nov.

(Figs 1-4, 9-10, 15)

*Types.* QUEENSLAND: *Holotype* ♂ (ANIC Type Reg. No. 3330, genitalia slide No. 3438), McIvor River Road, 11.v.1994, L.R. Ring (in ANIC). *Paratypes* (92 ♂♂, 63 ♀♀): 17 ♂♂, McIvor River Road, 1.viii.1993, 12.viii.1993, 14.viii.1993, 20.viii.1993, 22.viii.1993, 26.viii.1993, 4.iv.1994, 28.iv.1994, 1.v.1994, 2.v.1994, 6.v.1994, 9.v.1994, 11.v.1994, 12.v.1994, L.R. Ring; 7 ♀♀, McIvor River Road, 26.viii.1993, 11.v.1994, 25.v.1994, 30.v.1994, L.R. Ring; 1 ♂, 8 km SW Mt Webb, 14.iv.1994, L.R. Ring; 2 ♀♀, 8 km SW Mt Webb, 10.iv.1994, 1.vi.1994, L.R. Ring; 1 ♂, Hopevale Mission, 5.v.1994, L.R. Ring; 8 ♂♂, McIvor River, Cooktown, 25.v.1992, 8.vi.1992, 10.vi.1992, 19.vi.1992, 25.x.1992, 4.vii.1993, L.R. Ring; 11 ♀♀, McIvor River, 24.v.1992, 25.v.1992, 27.v.1992, 2.vi.1992, 8.vi.1992, 10.vi.1992, 12.vi.1992, 15.vi.1992, 17.vi.1992, 19.vi.1992, L.R. Ring; 2 ♂♂, McIvor Station, 27.iv.1994, 28.iv.1994, L.R. Ring; 4 ♀♀, McIvor Station, 14.iv.1994, 25.iv.1994, 1.v.1994, 3.v.1994, L.R. Ring; 1 ♂, 2 km Cooktown side, Endeavour Falls Roadhouse, 3.v.1994, L.R. Ring; 1 ♂, Isabella Falls, 2.x.1991, L.R. Ring; 1 ♀, 1.8 km past junction Battle Camp Road, 2.vi.1994, L.R. Ring (all in ANIC); 8 ♂♂, Isabella Falls, 3.x.1991, 10.xi.1991, 8.iv.1992, 22.iv.1992, 24.v.1992, 28.v.1992, 31.v.1992, J. Olive; 10 ♀♀, Isabella Falls, 14.iv.1992, 22.iv.1992, 23.iv.1992, 26.iv.1992, 28.iv.1992, 29.iv.1992, 3.v.1992, 6.v.1992, 14.v.1992, 18.v.1992, J. Olive; (in J.C. Olive collection); 1 ♂, Isabella Falls, 24.v.1992, J.C. Olive (in Australian Museum, Sydney); 1 ♂, Jan 1982, Cooktown, J. Booy (in J. Booy collection); 3 ♂♂, 24.v.1985, Isabella Falls, R.C. Manskie; 3 ♂♂, 4km W of Isabella Falls, Cooktown, 24.ix.1991, R.C. Manskie (in R.C. Manskie collection); 3 ♂♂, McIvor R. Road, 43 km NW of Cooktown, 22.ix.1993, J.W.C. d'Apice (in J.W.C. d'Apice collection); 5 ♂♂, 4 km NW Isabella Falls, Cooktown, emerged 2.iv.1994, 27.vii.1994, 10.viii.1994, 18.viii.1994, P.S. Valentine; 6 ♀♀, 4 km NW Isabella Falls, Cooktown, emerged 17.v.1994, 18.v.1994, 22.v.1994, 10.vii.1994, 16.ix.1994, 23.ix.1994 P.S. Valentine; 2 ♂♂, Carrol Creek, 3 km NW of Hopevale, emerged 19.xii.1994, 26.xii.1994, P.S. Valentine; 1 ♂, McIvor River, 20 km N of Hopevale, emerged 28.xii.1994, P.S. Valentine; 2 ♀♀, McIvor River, 20 km N of Hopevale, emerged 28.xii.1994, 30.xii.1994, P.S. Valentine; (in P.S. Valentine collection); 1 ♀, McIvor River, 24.v.1992, L.R. Ring; 9 ♂♂, 40 km W of Cooktown, 15°17'S 144°59'E, emerged 6.iii.1993, 5.ii.1994, 9.ii.1994, 12.iii.1994, 15.vii.1994, 19.viii.1994, 9-11.xii.1994, 19-23.v.1995, S.J. Johnson; 8 ♀♀, 40 km W of Cooktown, emerged 10.ii.1994, 15.ii.1994, 21.ii.1994, 27.ii.1994, 6.iii.1994, 27.ix.1994, 9-11.xii.1994, 19-23.v.1995, S.J. Johnson; (in S.J. Johnson collection); 1 ♂, 8 km SW Mt Webb, 6.vi.1994, L.R. Ring; 1 ♀, McIvor Station, 13.vi.1994, L.R. Ring; 14 ♂♂, McIvor River Road, 7.ix.1993, 12.ix.1993, 3.i.1994, 18.i.1994, 4.xii.1995, 7.xii.1995, 18.xii.1995, 20.xii.1995, R.G. Eastwood; 6 ♀♀, McIvor River Road, 13.ix.1993, 23.i.1994, 5.xii.1995, 7.xii.1995, 6.ii.1996, R.G. Eastwood; (in R.G. Eastwood collection); 1 ♂, McIvor River Road, 7.ix.1993, R.G. Eastwood (in L. Matthews collection); 1 ♂, McIvor River Road, 6.ii.1996, R.G. Eastwood (in R.W. Hay collection); 1 ♂, McIvor River, 25.v.1992, L.R. Ring; 1 ♀, McIvor River Road, 1.viii.1993, L.R. Ring (in S. Brown collection); 7 ♂♂, Cedar Scrub, 22.iv.1992, 1.x.1993, 12.x.1993, 15.x.1993, C. Pratt; 3 ♀♀, Cedar Scrub, 31.viii.1993, 28.x.1993, C. Pratt; (in C. Pratt collection).

*Male* (Figs 1, 3). Antennal length (of holotype) 7.0 mm, shaft dull black with white segmental bands, club dull black with underside orange-brown; head grey, frons adjacent to eye margins white, palpus white, terminal segment and dorsal surface dull black; thorax and abdomen dark grey, ventrally white; legs white, tibiae and tarsi with black bands. Fore wing length (of holotype) 13.0 mm, costa almost straight, termen slightly bowed, colour above grey-black, a basal area not reaching discocellular vein and extending three quarters length of hind margin bright metallic blue-green. Hind wing termen rounded, colour above grey-black, basal half bright metallic blue-green, costa and inner margin greyish. Fore wing beneath silver-white, basal dark suffusion between  $CuA_2$  and  $1A+2A$ . Hind wing beneath silver-white, a narrow black terminal line from  $M_3$  to tornus and black submedian spot on inner margin. Cilia white, at ends of veins  $M_3$ ,  $CuA_1$ ,  $CuA_2$  and tornus black.

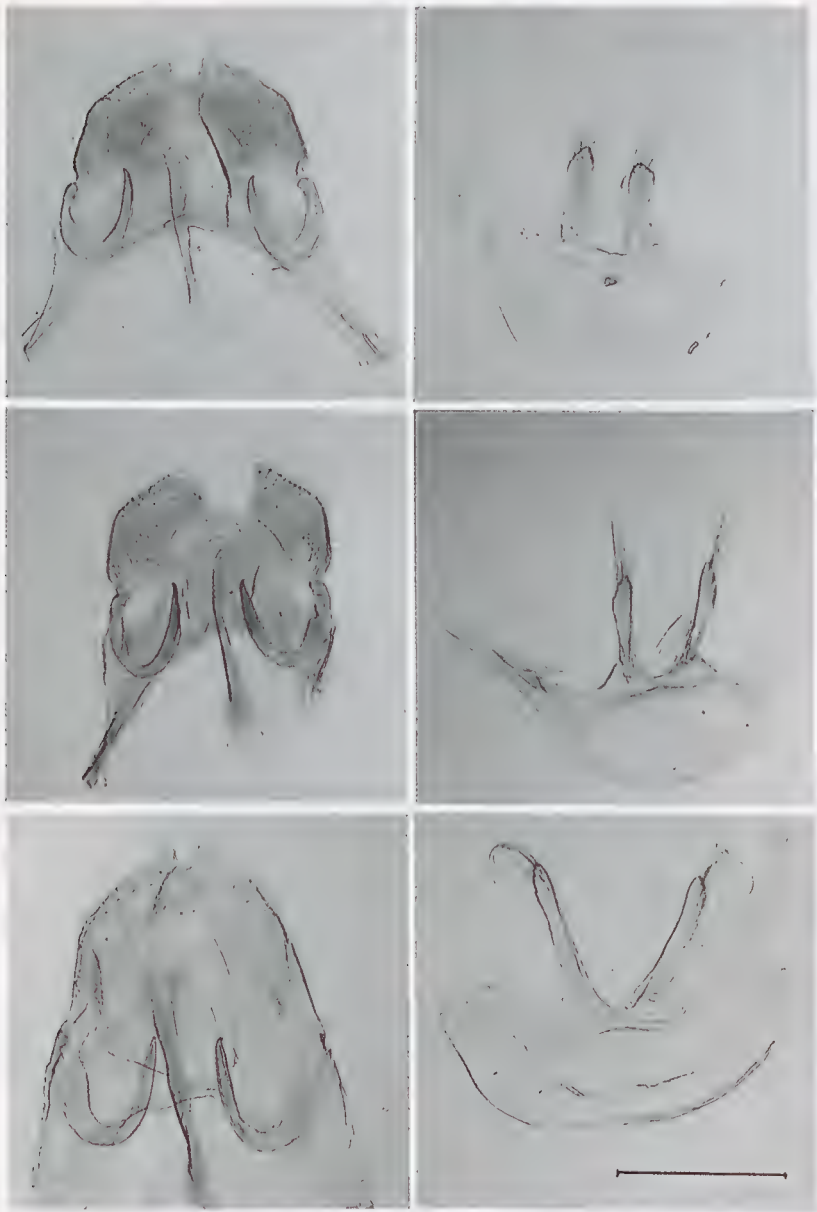
*Male genitalia* (Figs 9, 10, 15). Similar to typical *P. sappheira* and distinct from *P. nitens* in having much darker socii than *P. nitens*. In addition, the sinus is more rounded within the concavity of the sinus as is the anterior angle of the vault between the socii, which is angular in both *P. n. nitens* and *P. n. lucina*. The valvae conform to those illustrated by Sands (1980) for typical *Philiris sappheira*, but differ from *P. n. nitens*, especially in the relative thickness and shape.

*Female* (Figs 2, 4). Antennal shaft, head, palpus, thorax, abdomen and legs similar in colour to male. Fore wing costa basally curved, termen bowed; colour above dark grey with central area suffused blue green. Hindwing rounded, colour above grey-brown, cilia white, at ends of veins  $M_3$ ,  $CuA_1$ ,  $CuA_2$ . Fore and hind wing beneath similar to male.

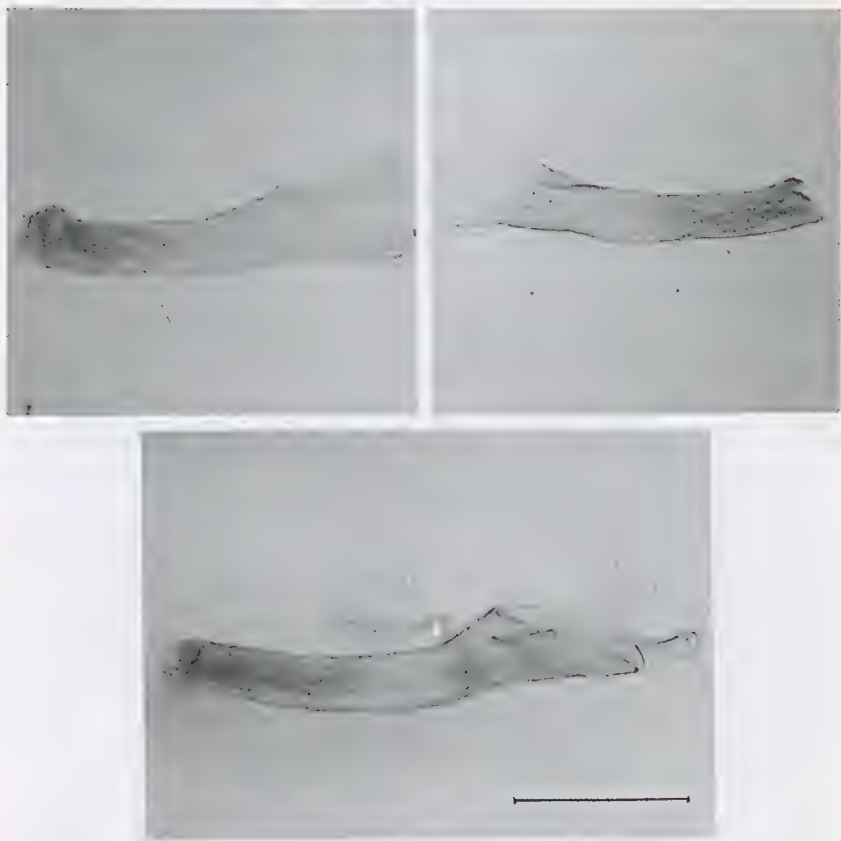
*Etymology*. The subspecies is named in honour of Mr R.C. Manskie of Maryborough, Qld.

### Discussion

Sands (1980) synonymised *Philiris kamerungae* Waterhouse and *P. nitens* 'restricta' Tite with *P. n. nitens* and referred to the range of variation of white suffusion on the upperside of the fore wing of both sexes. In the course of the present work, it was noted that specimens previously assigned to *P. n. restricta*, with reduced white areas, still exhibited some slight whitish suffusion on the upperside of the costa of the hind wing even on those specimens with no other white on the upper side. By contrast, of the extensive type series of *P. s. manskiei* examined, no specimen was found to have any white area on the upperside of the wings in either sex. Adults of *P. s. manskiei* were examined from every month and all were consistent in morphology with no apparent seasonal variation or polymorphism, known to occur elsewhere in the genus (Forbes 1977). Morphologically, *P. s. manskiei* differs from *P. s. sappheira* by having a larger expanse of blue colour on the hindwing of the male, whereas female *P. s. manskiei* are totally lacking any



**Figs 9-14.** *Philiris* spp.; male genitalia, sociuncus odd numbers, juxtae even numbers: (9,10) *Philiris sappheira manskiei*; (11,12) *Philiris nitens lucina*; (13,14) *Philiris nitens nitens*.



**Figs 15-17.** *Philiris* spp.; male aedeagus: (15) *Philiris sappheira manskiei*; (16) *Philiris nitens lucina*; (17) *Philiris nitens nitens*.

white colour on the upper surface of any wing other than a buff-white dorsal fold on the hindwing and consequently are very different from the nominotypical female illustrated in Sands (1980).

Common and Waterhouse (1981) recorded the distribution of *P. n. nitens* from "McIvor River, north of Cooktown, to Ingham", the McIvor River record being based on a specimen captured by Mr J.C. Le Souëf. and listed by Monteith and Hancock (1977). Examination of the specimens of *Philiris* lodged at the ANIC from the collection of the late Mr Le Souëf and scrutiny of correspondence between he and Dr Monteith from 1977 clearly indicate

that the specimen alluded to, whilst correctly identified as a female *P. n. nitens*, is labelled "Cooktown Q, 8 July 1964, J.C. Le Souëf."

The known distribution of *P. sappheira manskiei* is north and north west of Cooktown; 8 km SW of Mt Webb being the most northern record. Most specimens included in the type series were collected from relict forest referred to as "Cedar Scrub" by the Cook Shire Council and located 4 km east of the junction of Battle Camp Road and McIvor River Road (15°15'14"S, 144°59'52"E). The specimen collected by Mr J. Booy and labelled "Cooktown" (J. Booy pers. comm), plus the specimens collected by the authors and labelled "Isabella Falls", all belong to the Cedar Scrub locality. Despite frequent and extensive searching, no *P. n. nitens* or *P. s. manskiei* were located within the confines of the township of Cooktown and only *P. n. nitens* could be located on the southern side of the township, but not closer than 19 km south. Wherever the hostplant occurred on the northern side of Cooktown, the only *Philiris* found within the distribution area was *P. s. manskiei*. Thus, the known distribution of *P. n. nitens* is from 19 km S of Cooktown to Bluewater State Forest, 24 km N of Townsville.

The early stages of *P. n. nitens* are recorded by Common and Waterhouse (1981) feeding on *Glochidion philippicum* (Euphorbiaceae) but extensive breeding of this lycaenid by us has determined the primary hostplant to be *Macaranga involucrata*, the same hostplant utilised by *P. sappheira manskiei*. The early stages of these two taxa appear to be indistinguishable.

### Acknowledgments

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